



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/551,257

07/24/2006

Richard P. Merry

58603US004

3349

32692

7590

10/12/2010

3M INNOVATIVE PROPERTIES COMPANY

PO BOX 33427

ST. PAUL, MN 55133-3427

EXAMINER

WALTERS, RYAN J

ART UNIT

PAPER NUMBER

3726

NOTIFICATION DATE

DELIVERY MODE

10/12/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

LegalUSDocketing@mmm.com

LegalDocketing@mmm.com

Office Action Summary	Application No. 10/551,257	Applicant(s) MERRY, RICHARD P.	
	Examiner RYAN J. WALTERS	Art Unit 3726	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-37 is/are pending in the application.
- 4a) Of the above claim(s) 32-37 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 September 2005 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :11/25/2005, 5/6/2008, 1/27/2010.

DETAILED ACTION

Election/Restrictions

1. **Claims 32-37 are withdrawn** from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

2. Applicant's election with traverse of Group I (claims 19-31) in the reply filed on 1/27/2010 is acknowledged. The traversal is on the ground(s) that all of the claims are directly or indirectly dependent upon claim 19 and claim 19 does recite at least one special feature that is not taught by Knutsson.

This is not found persuasive because: Note that Claim 19 has been amended to add special technical features not taught by Knutsson. Applicant has now changed the scope of claim 19 and thus the examiner is changing the rationale for restriction; the rationale now being the following:

The inventions listed as Groups I-V do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons:

The special technical features common to every group are: the steps of making a molded preform for use in an exhaust system, mixing water, a binder and chopped magnesium aluminum silicate glass fibers to form a slurry of insulation material, providing a mold to form a molded preform, processing the slurry to form the molded preform and removing water from the slurry using a water removal system comprising a screen through which the water is removed. **Langer (US 5,869,010)** explicitly discloses

Art Unit: 3726

these steps (See Figs. 1-2; Col. 6, lines 49-56; Col. 5, lines 48-67; Col. 10, Example 1; Col. 4, lines 50-65). This can be further evidenced through the 102(b) rejection below.

The requirement is still deemed proper and is therefore made FINAL.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “water removal system” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. **Claims 21-29 are rejected under 35 U.S.C. 112, second paragraph**, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
6. **Claims 21 and 23** recite the limitation "the aluminum silicate glass fibers". There is insufficient antecedent basis for this limitation in the claim.
7. **Claim 28** recites the limitation "the inorganic colloid material" in line 2. There is insufficient antecedent basis for this limitation in the claim.
8. **Claim 29** recites the limitation "the water removal screen" in line 2. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. **Claims 19 and 29-30 are rejected under 35 U.S.C. 102(b) as being anticipated by Langer (US 5,869,010).**
11. Re **Claim 19**, Langer discloses a method of making a molded preform for use in an exhaust system component of an exhaust system of an internal combustion engine, the exhaust system component comprising two opposing metal walls defining a gap

Art Unit: 3726

therebetween, with the molded preform being disposed in the gap, and a space through which exhaust gas may flow when the exhaust system component is used in an exhaust system of an internal combustion engine,

said method comprising:

mixing water, a binder and chopped magnesium aluminum silicate glass fibers (Col. 5, lines 48-67) to form a slurry of insulation material (Col. 6, lines 49-56; Col. 5, lines 48-67; Col. 10, Example 1; Col. 4, lines 50-65);

providing a water removal system that comprises a screen through which water is removed by the water removal system (Col. 6, lines 49-56; Col. 10, Example 1);

providing a mold constructed to form the molded preform comprising the insulation material and being dimensioned so as to be positionable within the gap between the two opposing walls of the exhaust system component (Col. 10, Example 1; Figs. 1-2); and processing the slurry to form the molded preform, said processing comprising disposing the slurry into the mold and removing water from the slurry through the screen by using the water removal system (Col. 6, lines 49-56; Col. 10, Example 1; Figs. 1-2).

Note that the limitation "for use in an exhaust system component of an exhaust system of an internal combustion engine, the exhaust system component comprising two opposing metal walls defining a gap therebetween, with the molded preform being disposed in the gap, and a space through which exhaust gas may flow when the exhaust system component is used in an exhaust system of an internal combustion engine" are intended use recitations. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the

Art Unit: 3726

prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458,459 (CCCPA 1963).

The recitation of "for use in an exhaust system component of an exhaust system of an internal combustion engine, the exhaust system component comprising two opposing metal walls defining a gap therebetween, with the molded preform being disposed in the gap, and a space through which exhaust gas may flow when the exhaust system component is used in an exhaust system of an internal combustion engine" is considered functional language. Langer discloses all the structural components of the device and all of the steps of making it, which read on those of the instant invention. Therefore, the method of Langer is deemed capable of performing the same desired functions as the instant invention as claimed in claim 1.

12. Re **Claim 29**, Langer discloses the mold being provided comprises the water removal screen (Col. 6, lines 49-56; Col. 10, Example 1).

13. Re **Claim 30**, Langer discloses the molded preform is formed into a shape suitable for use in a double-walled exhaust pipe of an exhaust system (Figs. 1-2).

14. **Claims 19-23 and 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Rogers (US 5,290,522) (with reference to Langer (US 5,869,010)).**

15. Re **Claim 19**, Rogers discloses a method of making a molded preform for use in an exhaust system component of an exhaust system of an internal combustion engine,

Art Unit: 3726

the exhaust system component comprising two opposing metal walls defining a gap therebetween, with the molded preform being disposed in the gap, and a space through which exhaust gas may flow when the exhaust system component is used in an exhaust system of an internal combustion engine,

said method comprising:

mixing water, a binder and chopped magnesium aluminum silicate glass fibers to form a slurry of insulation material

providing a water removal system through which water is removed by the water removal system;

providing a mold constructed to form the molded preform comprising the insulation material and being dimensioned so as to be positionable within the gap between the two opposing walls of the exhaust system component; and

processing the slurry to form the molded preform (Col. 7, Example 2);

Although Rogers is silent to the water removal system comprising a screen and removing water from the slurry through the screen, this is believed to be inherent since Rogers discloses using a conventional paper making machine (Col. 7, lines 45-46) and since **Langer** teaches that traditional papermaking techniques include pouring the slurry onto a screen to remove the water (Col. 6, lines 50-56).

Note that the limitation "for use in an exhaust system component of an exhaust system of an internal combustion engine, the exhaust system component comprising two opposing metal walls defining a gap therebetween, with the molded preform being disposed in the gap, and a space through which exhaust gas may flow when the

Art Unit: 3726

exhaust system component is used in an exhaust system of an internal combustion engine" are intended use recitations. A recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. In a claim drawn to process of making, the intended use must result in a manipulative difference as compared to the prior art. See *In re Casey*, 152 USPQ 235 (CCPA 1967) and *In re Otto*, 136 USPQ 458,459 (CCCPA 1963).

The recitation of "for use in an exhaust system component of an exhaust system of an internal combustion engine, the exhaust system component comprising two opposing metal walls defining a gap therebetween, with the molded preform being disposed in the gap, and a space through which exhaust gas may flow when the exhaust system component is used in an exhaust system of an internal combustion engine" is considered functional language. Langer discloses all the structural components of the device and all of the steps of making it, which read on those of the instant invention. Therefore, the method of Langer is capable of performing the same desired functions as the instant invention as claimed in claim 1.

16. Re **Claims 20-21**, Rogers discloses chopping magnesium aluminum silicate glass fibers, for use in the slurry, to an average length in the range of from greater than about 0.3 cm to less than 3 cm and a length in the range of from about 0.5 cm to about 15 cm (Col. 7, Example 2).

Art Unit: 3726

17. Re **Claim 22**, Rogers discloses said chopped magnesium aluminum silicate glass fibers comprise aluminum oxide in an amount of 10 to 30% by weight, silicon dioxide in an amount of 52 to 70% by weight and magnesium oxide in an amount of 1 to 12% by weight based on the total weight of the glass fiber and wherein the weight percentages of aluminum oxide, silicon dioxide and magnesium oxide are calculated on a theoretical basis as Al_2O_3 , SiO_2 and MgO respectively (Claim 1).

18. Re **Claim 23**, Rogers discloses said insulation material is comprised of at least 90% by weight of said aluminum silicate glass fibers (Claim 13).

19. Re **Claim 30**, Rogers discloses the molded preform is formed into a shape suitable for use in a double-walled exhaust pipe of an exhaust system (Fig. 1).

Claim Rejections - 35 USC § 103

20. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

21. **Claims 20-23 and 25-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langer (US 5,869,010) in view of Rogers (US 5,290,522).**

22. Re **Claims 20-21**, Langer discloses chopping magnesium aluminum silicate glass fibers, for use in the slurry, the aluminum silicate glass fibers have a number average diameter of 5 .micrometer or more (Col. 5, lines 48-67). Langer does not explicitly teach chopping them to an average length in the range of from greater than about 0.3 cm to less than 3 cm and a length in the range of from about 0.5 cm to about

Art Unit: 3726

15 cm.

However, **Rogers** teaches chopping magnesium aluminum silicate glass fibers, for use in the slurry, to an average length in the range of from greater than about 0.3 cm to less than 3 cm and a length in the range of from about 0.5 cm to about 15 cm (Col. 7, Example 2). It would be obvious to one of ordinary skill in the art to have the lengths, as taught by Rogers, for the purpose of ensuring the fibers are sized appropriately for the mat and to ensure they will form the desired configuration.

23. Re **Claim 22**, Langer discloses using chopped magnesium aluminum silicate glass fibers (Col. 5, lines 48-67) and thus it appears to be inherent that the claimed composition range is used. However, Langer does not explicitly state that said chopped magnesium aluminum silicate glass fibers comprise aluminum oxide in an amount of 10 to 30% by weight, silicon dioxide in an amount of 52 to 70% by weight and magnesium oxide in an amount of 1 to 12% by weight based on the total weight of the glass fiber and wherein the weight percentages of aluminum oxide, silicon dioxide and magnesium oxide are calculated on a theoretical basis as Al_2O_3 , SiO_2 and MgO respectively.

However, **Rogers** teaches said chopped magnesium aluminum silicate glass fibers comprise aluminum oxide in an amount of 10 to 30% by weight, silicon dioxide in an amount of 52 to 70% by weight and magnesium oxide in an amount of 1 to 12% by weight based on the total weight of the glass fiber and wherein the weight percentages of aluminum oxide, silicon dioxide and magnesium oxide are calculated on a theoretical basis as Al_2O_3 , SiO_2 and MgO respectively (Claim 1).

Art Unit: 3726

It would be obvious to one of ordinary skill in the art to have the material composition, as taught by Rogers, for the purpose of utilizing an optimal strength composition of the glass fibers and also since this is known and commercially available material.

24. Re **Claim 23**, Langer does not explicitly disclose said insulation material is comprised of at least 90% by weight of said aluminum silicate glass fibers.

However, **Rogers** teaches said insulation material is comprised of at least 90% by weight of said aluminum silicate glass fibers (Claim 13).

It would be obvious to one of ordinary skill in the art to have the material composition, as taught by Rogers, for the purpose of utilizing an optimal strength mat.

25. Re **Claim 25**, Langer discloses the slurry further comprises organic binder material and one or more plasticizers (Col. 5, line 40).

26. Re **Claim 26**, Langer discloses the slurry further comprises inorganic binder material (Col. 2, line 33; Col. 4, line 5).

27. Claims 24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Langer (US 5,869,010) or Rogers in view of Langer '059 (US 5,523,059).

28. Re **Claim 24**, Langer does not disclose the slurry further comprises organic binder material in an amount up to about 10 weight percent based on the weight of the insulation material.

However, **Langer '059** teaches the slurry further comprises organic binder material in an amount up to about 10 weight percent based on the weight of the insulation material (Col. 4, lines 66-67).

Art Unit: 3726

It would be obvious to one of ordinary skill in the art to have the material composition, as taught by Langer '059, for the purpose of creating an optimal strength mat and customizing the flexibility and moldability of the composition and adjusting the viscosity of the material.

29. Re **Claim 27**, Langer does not disclose the slurry further comprises an inorganic colloidal material, and said method further comprises: forming the inorganic colloidal material in the slurry in the presence of magnesium aluminum silicate glass fibers.

However, **Langer '059** teaches the slurry further comprises an inorganic colloidal material, and said method further comprises: forming the inorganic colloidal material in the slurry (Col. 4, lines 5-10).

It would be obvious to one of ordinary skill in the art to have the material composition, as taught by Langer '059, for the purpose of creating an optimal strength mat and customizing the flexibility and resiliency of the composition (Col. 4, lines 5-10).

30. **Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Langer (US 5,869,010) or Rogers in view of Langer '059 (US 5,523,059), as applied to claim 27, in further view of Honma (US 6,436,598).**

31. Re **Claim 28**, Langer does not disclose the inorganic colloid material is formed by adding two or more water soluble precursors to the slurry that combine to form a metal hydroxide.

However, **Honma** teaches obtaining an inorganic colloid material by adding two or more water soluble precursors to form a metal hydroxide (Col. 12, lines 40-67).

Art Unit: 3726

It would be obvious to one of ordinary skill in the art to form the colloid material, as taught by Honma, for the purpose of having a desired particle distribution.

32. **Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Langer (US 5,869,010) or Rogers in view of Applicant Admitted Prior Art (AAPA, hereinafter).**

33. Re **Claim 31**, Langer discloses the molded preform has dimensions suitable for being inserted into and insulating an end cone region of a pollution control device (Figs. 1-2). Langer does not explicitly disclose the molded preform is an end cone preform having a three dimensional conical shape, and the molded end cone preform maintains its three dimensional conical shape under the force of gravity after having been formed.

However, **AAPA** teaches a molded preform is an end cone preform having a three dimensional conical shape, and the molded end cone preform maintains its three dimensional conical shape under the force of gravity after having been formed (Page 12, last paragraph). It would be obvious to form a conical shape, as taught by AAPA, since this is a known method and also to form a desired geometry so that the preform can be used in a catalytic converter.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RYAN J. WALTERS whose telephone number is (571)270-5429. The examiner can normally be reached on Monday-Friday, 9am-5pm EST.

Art Unit: 3726

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Bryant can be reached on 571-272-4526. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/R. J. W./
Examiner, Art Unit 3726

/DAVID P. BRYANT/
Supervisory Patent Examiner, Art Unit 3726